

REMARKS

Claims 1 and 6-11 are pending. No amendments have been made by way of the present submission, thus, no new matter has been added.

Additionally, no new issues have been raised by way of the present submission which would require additional search and/or consideration on the part of the Examiner. In the event that the present submission does not place the application into condition for allowance, entry thereof is respectfully requested as placing the application into better form for appeal.

In view of the following remarks, Applicants respectfully request that the Examiner withdrawal all rejections and allow the currently pending claims.

Issues under 35 U.S.C. §103(a)

The Examiner has rejected claims 1 and 6-11 under 35 U.S.C. §103(a) as being obvious over the combination of EP 104930 (hereinafter referred to as EP '930), Matsumoto et al., USP 5,958,668 (hereinafter referred to as Matsumoto '668) and Hayashi et al., USP 4,273,723 (hereinafter referred to as Hayashi '723).

Moreover, the Examiner has rejected claims 1 and 6-11 under 35 U.S.C. §103(a) as being obvious over the combination of EP 0962812 (hereinafter referred to as EP '812), Matsumoto '668 and Hayashi '723.

Applicants respectfully traverse each of the above rejections.

The Present Invention and Its Advantages

The present invention relates to a heat-developable image recording material comprising: a support; a photosensitive silver halide; a reducing agent for a silver ion; a binder; and a non-photosensitive organic silver salt grain, wherein the non-photosensitive organic silver salt grain has: 1) substantially no silver stearate; 2) a length/width ratio of 1 to 9; 3) an aspect ratio of 1.1 to 30; an equivalent-sphere diameter of 0.05 to 1 μm ; 5) a content of silver behenate that is 97 to 100 mol% per mol of the non-photosensitive organic silver salt; and 6) a content of silver arachidate that is 3 mol% or less per mol of the non-photosensitive organic silver salt.

Applicants draw the Examiner's attention to the specific requirements for the non-photosensitive organic silver salt grain as required by claim 1 of the present invention. In particular, each of the above six requirements must be satisfied by the non-photosensitive organic silver salt grain. Of particular relevance is the fact that the non-photosensitive organic silver salt grain must have substantially no silver stearate, must have a content of silver behenate or 97 to 100 mol % per mol of the non-photosensitive organic silver salt, and must have a content of silver arachidate of 3 mol % or less per mol of the non-photosensitive organic silver salt.

Distinctions Between the Present Invention and the Cited Art

The two main references cited by the Examiner are EP '930 and EP '812. The Examiner has supplemented the disclosure of these references with that of Matsumoto '668 and Hayashi '723. However, Applicants respectfully submit that these references, whether viewed individually, or in combination, cannot support a *prima facie* case of obviousness. For instance,

Applicants respectfully submit that the prior art fails as a whole to suggest or disclose the subject matter of independent claim 1 of the present invention. In particular, the prior art fails to suggest or disclose the presently claimed subject matter wherein the non-photosensitive organic silver salt grain has 1) substantially no silver stearate, 2) a content of silver behenate that is 97 to 100 mol % per mol of the non-photosensitive organic silver salt, and 3) a content of silver arachidate that is 3 mol % or less per mol of the non-photosensitive organic silver salt.

To support the above conclusions Applicants draw the Examiner's attention to the disclosures of EP '930 and EP '812. A review of these references reveals a lack suggestion or disclosure of the above three requirements. First, the above requirements are directly influenced by the silver behenate mentioned in EP '930 and EP '812. That is, the presence of the silver behenate (in particular the behenic acid) in EP '930 and EP '812 precludes the references from obtaining grains meeting the claimed requirements, such as containing substantially no silver stearate. The behenic acid utilized in these references is produced from fatty acids derived from plants, naturally containing as impurities fatty acids with a chain length different from behenic acid, such as stearic acid and arachidic acid. Thus, behenic acid always contains silver stearate and/or silver arachidate impurities in higher amounts if it is not subjected to a further purification process. The presence of the impurities in behenic acid is confirmed by the composition of commercially available product, such as the two products called "behenic acid" provided in the Internet catalogue of Thornley Company, submitted on July 13, 2004 and October 31, 2003, additional copy of which is attached. According to the specifications these products consist of a mixture of 70 and 90 mol% of behenic acid and 30 and 10 mol% of arachidic acid, respectively. Thus, the commercially available products do not contain behenic acid in an amount of 97 to 100

mol%, silver arachidate in an amount of 3 mol% or less and substantially no silver stearate so that further purification is required to obtain a fatty acid composition suitable for the preparation of organic silver salt grains according to the present invention.

In fact, there is no discussion in EP '930 or EP '812 that reducing the content of silver stearate and silver arachidate in the organic silver salts is desirable. In contrast thereto, silver stearate and silver arachidate are cited as preferred organic salts.

Second, according to the examples of EP '930 ([0138]-[0140]), the organic silver salts are prepared from mixtures of silver behenate, arachidic acid and stearic acid. The behenic acid content in the organic silver salt powders A and B of EP '930 is 42 and 85 mol%, the content of silver arachidate 34 mol% and 12 mol%, and the content of silver stearate is 24 mol% and 3 mol%, respectively. Thus, EP '930 does not disclose a preferred amount of substantially no silver stearate, 3 mol% or less for the amount of silver arachidate, and 97 to 100 mol% for the amount of silver behenate in the organic silver salts.

Third, EP '812 describes the preparation of fatty acid silver salts by reacting silver with sodium behenate ([0221]). The behenic acid used in the production of the organic silver salts of EP '812 (trade name Edenor C22-85R, [0270]) has a content of behenic acid of 88 mol%, a content of stearic acid of 2 mol% and a content of arachidic acid of 5.7 mol%. Therefore, the behenic silver salt grains of EP '812 do not comply with the definition of the organic silver salt grains recited in claim 1 of the present application having a content of silver behenate in the range of 97 to 100 mol%, substantially no silver stearate, and 3 mol% or less of silver arachidate.

In summary, the present invention, in particular relating to a heat-developable image recording material, having non-photosensitive organic silver salt grains which have substantially no silver stearate, have a content of silver behenate that is 97 to 100 mol% and a content of silver arachadate which is 3 mol% or less, are not suggested or disclosed by EP '930 or EP '812. Moreover, the other references of Matsumoto '668 and Hayashi '723 fail to cure these deficiencies. These deficiencies alone preclude a *prima facie* case of obviousness.

However, even if the Examiner has hypothetically established a *prima facie* case of obviousness, a point not conceded by Applicants, the unexpectedly superior results according to the present invention rebuts such hypothetical case of obviousness. For instance, Applicants again request that the Examiner refer to the Declaration pursuant to 37 C.F.R. §1.132 executed by Takayoshi Oyamada submitted on October 31, 2003. This Declaration provides definitive evidence outlining the differences between the present invention and the photosensitive materials of the references, for instance EP '930 and EP '812.

A comparison of the results represented of the Declaration clearly shows that the "Change in Percentage of Image Preservability" drastically increases (from 25% for a silver stearate content of 1 mol% to about 45% on average for a silver stearate content of 2 mol%, or from 13% for a silver stearate content of 0.5 mol% to about 45% on average for a silver stearate content of 2 mol%), reaching a problematic level for practical application, when the content of stearic acid exceeds 1 mol% (note that claims require "substantially no silver stearate"). The present inventors assume that the deterioration of the image preservability is caused by a dissolved product due to stearic acid present in the layer after thermal development in an amount higher than 1 mol%. The strong correlation of the silver stearate content to the image

preservability of the recording material is not known in the state of the art and is not deducible from EP '930 and EP '812. Therefore, one of skill in the art is given no motivation to use a behenic acid in the production of the silver salt grains, wherein the silver stearate content was reduced to such that substantially no silver stearate is present. Using silver behenate grains with substantially no silver stearate content as claimed in claim 1 of the present application results in surprising and advantageous properties of the claimed heat-developable photosensitive material of the present invention.

Thus, even if the Examiner has hypothetically established a *prima facie* case of obviousness, a point not conceded by Applicants, the unexpectedly advantageous properties according to the present invention compared with the cited art, rebut any hypothetical *prima facie* case of obviousness.

Moreover, the other references of Matsumoto '668 and Hayashi '723 fail to cure any of the deficiencies of the primary references. Also, even if Matsumoto '668 and Hayashi '723 hypothetically disclose amounts of silver behenate as claimed, also not conceded by Applicants, other distinguishing characteristics still exist, for instance, the Examiner is referred to the claimed amounts of silver stearate and silver arachidate. Accordingly, the Examiner has failed to establish a *prima facie* case of obviousness. Alternatively, any hypothetical *prima facie* case of obviousness is moot in view of the unexpected results according to the present invention. Reconsideration and withdrawal of the outstanding rejections are respectfully requested.

If the Examiner has any questions or comments, please contact Craig A. McRobbie, Registration No 42,874 at the offices of Birch, Stewart, Kolasch & Birch, LLP.


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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to our Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under § 1.17; particularly, extension of time fees.

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Respectfully submitted,

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